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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,043	06/13/2001	Kazuhiko Oda	209543US0	3558
22850	7590	01/26/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER LAM, CATHY FONG FONG	
			ART UNIT	PAPER NUMBER
			1775	
DATE MAILED: 01/26/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/879,043	Applicant(s) ODA ET AL.	
	Examiner Cathy Lam	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 23-37 and 39-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,8,9,11,13,14,16,18,19,21,22,59,61,63,65,67,69 and 71-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03-31-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1,3-5,8,9,11,13,14,16,18,19,21-37,39-41,59,61,63,65,67,69 and 71-82.

In view of the amendment and remarks filed on October 15, 2004, the pending claims are continued to be unpatentable as following:

This application contains claims 23-37 and 39-41 are drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6, 8, 9, 59 and 71-80 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses an electrically conductive paste comprised of 60-90 wt% of metal or metal compound particles and a solvent (col 3 L 43-46).

The metal particles are dispersed into the solvent by using a surfactant (col 3 L 26-28, L 34-36). The metal particles have an average particle size of 0.5-5.0 μm (col 2 L 45-47).

Shoji states that the surfactant is added to improve the dispersibility of the metal particles (col 3 L 35-36). Shoji implicitly stated the amount of the vehicle (or organic solvent) (col 3 L 58-65).

The examiner takes the position that surface active agent is a surfactant, for it is well known to be used to improve particles dispersibility. The examiner also takes the position that with the presence of surfactant, the metal particles are taken as undried particles when mixing with the solvent.

Applicant in the present invention washes the metal particles with water and leave the metal particles undried then mixing with the organic solvent, the water in the case acts as a surfactant, which improves dispersibility.

3. Claims 11, 13, 14, 16, 18, 19, 21, 22, 63, 67 and 71-82 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses a conductive paste that is used to form conductive pattern on a ceramic substrate. The conductive paste is comprised of metal and metal compound particles, surfactant, organic solvents and organic binder (col 5 L 12-26).

The metal particles are dispersed into an organic solvent through the use of an surfactant, followed by mixing with a vehicle component which comprises two solvents (ie. terpineol and butyl-carbitol) and an organic binder (ie. ethylcellulose) (col 5 L 23-26).

The examiner takes the position that the water remains on the metal particles' surface is the surfactant, which improves dispersibility.

4. Claims 1, 3, 4, 11, 13, 14, 21, 59, 63, 67, 71-73, 77-78 and 81 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Burn (US 4766927).

Burn also discloses a conductive paste comprised of metal particles, a solvent, and a surfactant. The conductive paste is used to form electrodes in a ceramic structure.

The metal particles have a size of about 1 μ m. the surfactant is used to improve dispersibility of the metal particles (col 5 L 35-39).

The conductive paste has a metal loading of 55 wt% and 45 wt % of organic medium which comprised of a resin binder and a solvent (col 9 L 21-25).

The solvent is a terpineol and the binder is n-butyl methacrylate polymer (col 5 L 36-37). The examiner takes the position that the water remains on the metal particles' surface acts as a surfactant.

5. Claims 6, 8, 9, 16, 18, 19, 22, 61, 65, 69 and 74-76, 79-80 and 82 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burn (US 4766927).

Burn discloses a conductive paste which is used to make electrodes in a ceramic structure. Burn teaches copper particles but silent about using metal compound particles.

One skill in the art would choose a desired material for the metal powders in the conductive paste because a metal compound is an obvious variant of a pure metal.

Response to Arguments

The arguments raised in the remarks filed on October 15, 2004 have been fully considered but not persuasive.

Applicant states that in the specification (page 9-11), the comparative examples do not use undried metal powder, thus the dry sheet surface roughness of a finished product is not an ideal one.

The comparative examples in the specification has no mention of using any surfactant on the metal particles, whereas the prior art of record (ie. Shoji et al US 4552691 and Burn US 4766927) both teach the use of surfactant to improve the dispersibility. Therefore, the examiner continues to rely on the prior art teachings of Shoji and Burn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cathy Lam
Primary Examiner
Art Unit 1775